

ABSTRACT

A chemical mechanical polishing system having a wafer carrier assembly is provided. The wafer carrier assembly includes a wafer carrier support frame, a wafer carrier head housing rotatable mounted on the wafer carrier support frame, with a base including a bladder bellows operating connecting the wafer carrier base to the wafer carrier head housing such that rotational torque is transferred from the wafer carrier head housing to the wafer carrier base. Further provided is a retaining ring, operatively connected to a retaining ring bearing which allows relative axial motion while constraining relative radial motion between the retaining ring and the wafer carrier head housing; and a retaining ring bellows, operatively connecting the retaining ring bearing to urge the retaining ring against a polishing member. A chamber formed by the bladder bellows, the wafer carrier base and the wafer carrier head housing may be pressurized to load the wafer carrier base against a polishing member, independent of any frictional loads on the retaining ring.

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